





* PCB MODS	DATE		DRAWN BY	CHECKED BY
MODIFICATION	6-2-80		G. N. N.	
A	6-2-80			
B	27-3-80			
C	8-6-80			
D	6-1-81			
Research Machines Ltd				
TITLE HIGH RESOLUTION GRAPHICS BOARD 16K RAM & TIMING				
DRAWING NO. 380Z-HRG-2				





<u>Mnemonic</u>	<u>Code</u>	<u>Hex</u>	<u>Function</u>
S4KIN	48	30	Read SIO-4 into reg A
BOOT	49	31	Perform a cold bootstrap
LPSTAT	50	32	Check that printer is ready
VERSN	51	33	Return version number of COS

\* These EMTs may not be supported in future versions of COS

#### SUMMARY OF OUTC CONTROL CHARACTERS

<u>Character</u>	<u>Code</u>	<u>Hex</u>	<u>Function</u>
CTRL D	4	4	Resume output (after CTRL O)
CTRL H (BACKSPACE)	8	8	Cursor left (non-destructive)
CTRL I (TAB)	9	9	Horizontal tab (non-destructive)
CTRL J (LINE FEED)	10	A	Cursor down
CTRL K	11	B	Cursor up
CTRL L (FORM FEED)	12	C	Clear screen, cursor to bottom left
CTRL M (RETURN)	13	D	Carriage return/linefeed
CTRL N	14	E	Carriage return
CTRL O	15	F	Suppress output
CTRL Q	17	11	Clear paging counter
CTRL S	19	13	Set paging counter
CTRL U	21	15	Blink on
CTRL V	22	16	Initiate XY addressing
CTRL W	23	17	Blink off
CTRL X	24	18	Cursor right (non-destructive)
CTRL Y	25	19	Clear to end of line
CTRL J	29	1D	Cursor home (top left)
CTRL ↑	30	1E	Clear to end of line
CTRL —	31	1F	Cursor home and clear screen
DELT (RUBOUT)	127	7F	Destructive backspace

#### SUMMARY OF MONITOR COMMANDS

B	Bootstrap CP/M from disc and execute
X	Bootstrap CP/M from disc drive B
L	Load program from cassette
D	Dump memory to cassette
C	Continue program at restart address
J	Jump to address and execute program
O	Select printer option
M	Enable High Resolution Graphics board as memory
CTRL C	Return to Command Level
CTRL F	Enter Front Panel mode
CTRL T	Enter Typewriter mode

NA COS 'M'  
command  
not CP 'M'  
command

Maps HRG RAM  
into/out of Mem  
memory on 31K  
Systems → 47K

Enable High Resolution Graphics board as memory

The M command enables the High Resolution Graphics board as memory and restarts COS. This command is more or less equivalent to pressing the reset button, in that it rewrites all the low and high memory scratchpad normally written on reset. This command should be issued only in a 32K system, without any add-on RAM.

31K - 47K